ABSTRACT:

The invention relates to an X-ray detector which includes at least one
conversion unit (1) for converting absorbed X-ray quanta into electric charge signals, at least
one evaluation unit (10) for amplifying and further processing the charge signals, and at least
one data processing unit (11) for the acquisition, further processing and output of data. The

5   charge signals are first amplified by an input amplifier (2) in the evaluation unit (10) after
which they are evaluated in parallel in a counting channel (5) as well as in an integrator
channel (7). The charge signals are then counted in the counting channel and the overall
charge is integrated in the integrator channel as a measure of the energy delivered in the
conversion unit (1). Because of the parallel presentation of the counting results and the

10   integration results, more weight can be attached thereto in their respective range of the
quantum flow that is optimum from a measuring point of view, so that the dynamic range of
the X-ray detector is enlarged. Furthermore, additional information, for example, the mean
absorption energy of the X-ray quanta, can be determined from the combination of the
signals.

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Figure